

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: **Daniel R. Palmer
Warren G. Branch III
Gary B. Bertram**

Docket No.: 2000007

Serial No.: 09/688,002

Art Unit: 2881

Filed: October 14, 2000

Examiner: David A. Vanore

For: **Corona Wire Tensioning Mechanism**

Assistant Commissioner of Patents & Trademarks
Washington, D.C. 20231

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BRIEF FOR APPELLANT

Sir:

This brief is filed in support of the Notice of Appeal filed on September 3, 2004. This brief is in support of an appeal from the final action of the Primary Examiner mailed June 3, 2004, and the subsequent Advisory Action and Supplement to the Advisory mailed September 22, 2004.

I. **THE REAL PARTY IN INTEREST**

The real party in interest is Eastman Kodak Company.

II. RELATED APPEALS AND INTERFERENCES

Appellant believes there are no related interferences or appeals that will have any bearing on this appeal.

III. STATUS OF THE CLAIMS

Claims 1-22 are pending in the application, and claims 9-22 have been withdrawn from further consideration due to a restriction requirement, which was timely traversed. Claims 1, and 3-8 stand rejected. The rejection against claim 2 has been withdrawn per the advisory action. Appeal is taken on the rejected claims 1, and 3-8.

IV. STATUS OF THE AMENDMENTS

Claim 3 and 6 have been amended once to put them in independent form. These changes did not include any new matter, and in no way changed the scope of the claims. Claim 1 has been amended once to incorporate the alignment groove as disclosed in the drawings. Claim 7 has been amended once to put it in independent form, and to clarify that by "v-shaped" block Appellants meant that the legs formed an acute angle relative to each other. All amendments were entered by the Examiner. The appealed claims are included in Appendix A of this brief.

V. SUMMARY OF THE INVENTION AND ITS ILLUSTRATIVE EMBODIMENT

This invention discloses a means for spring loading the wire 6 without actually attaching the spring 40 to the wire 6. This minimizes the risk of arcing from the spring 40 to the wire 6 and to other components within the machine. This improvement also minimizes side loads on the wire 6 by distributing the force on the attachment means 3, such as a lug, all the way around the attachment means 3. The wire tensioning mechanism 2 is for tensioning a wire 6 in a machine 4. The wire 6 has an end one (not shown) and an end two 7 (see figures 2-3) and is fixed to the machine 4 at end one, and has a means for

attachment 3 on end two 7. The wire tensioning mechanism 2 comprises a slide block 30, and a spring 40.

The slide block 30 is slidably mounted to the machine 4 at end two 7 of the wire, such that the slide block 30 slides parallel to the wire 6. The slide block 30 has a slot 35 which is wider than the wire 6 but narrower than the means for attachment 3, such that when the slide block 30 is mounted on the machine 4, the wire end two 7 can be slid into the slot 35 such that pulling the slide block 30 in the direction away from the wire 6 forces the means for attachment 3 against the slot 35, but does not allow the means for attachment 3 to pass through. The slot 35 is lined up with the wire 6 such that when the wire 6 is in tension, there are no side loads on the means for attachment 3. In a preferred embodiment, the means for attachment 3 is a lug crimped on the wire end two 7.

In order to align the wire 6 to the desired direction, the machine 4 may have grooves 8 where the wire must lay. The slide block 30 may be slightly offset from the groove 8 in order to register the wire 6 against the groove 8 such that the wire 6 doesn't move.

The spring 40 is mounted between the machine 4 and the slide block 30 such that the spring 40 exerts a force on the slide block 30 in the opposite direction of the force which the tensioned wire 6 exerts on the slide block 30. The force of the spring 40 can cause the slide block 30 to slide, and the spring 40 is chosen such that the force exerted on the slide block 30 causes the wire 6 to achieve the desired tension. Thus the spring 40 forces the slide block 30 to pull on the wire 6.

The wire tensioning mechanism 2 may further comprises a holder 10 which is mounted to the machine 4. Thus all of these design elements could be combined into a holder mechanism, which then is mounted to the machine as one unit, making installation easier. Thus the slide block 30 is slidably mounted to the holder 10, which is then mounted to the machine. Alternatively a slide pin 20 may be mounted directly to the machine 4, wherein the slide block 30 is slidably mounted to the machine 4 on the slide pin 20 (see Fig-1)

When a holder **10** is incorporated, the spring **40** may be mounted between the machine **4** and the slide block **30** (this configuration not shown) or between the holder **10** and the slide block **30** (see Figures 2-4). The preferred embodiment is to have the spring **40** mounted between the slide block **30** and the holder **10**.

In a further preferred embodiment, the slide block **30** is v-shaped, and the v-shaped slide block **30** comprises a leg one **34** and a leg two **32** (this is best seen in Fig-3). Slide block leg one **34** is slidably mounted to the machine **4**, and leg two **32** is on the same side of leg one **34** as the wire **6** such that leg two **32** angles away from the wire **6**. Thus the "v" is laying on one of its sides (leg one **34**), and the slot **35** is in the other side of the "v" (leg two **32**). The portion of the slide block **30** with the slot **35** angles away from the wire **6** in order to better keep the wire **6** from slipping out of the slot **35**.

VI. ISSUES ON APPEAL

A) The non-anticipation of claims 1, and 3-8 by Clark.

VII. THE ART RELIED ON BY THE EXAMINER

Clark	USP 3,908,127	9/23/1975
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VIII. GROUPING OF THE CLAIMS

Claims 1, and 3-8 have been rejected under 35 U.S.C. 102 as being anticipated by Clark. Appellant's have argued claims 1, 3, 6, and 7 separately below, and as such request that these claims be considered individually.

IX. APPELLANT'S ARGUMENTS

THE NON-ANTICIPATION OF CLAIMS 1, and 3-8 BY CLARK

Appellants respectfully submit that claim 1, and by dependency claims 4, 5, and 8, are not anticipated by Clark. Appellants further respectfully submit that for the following reasons, claims 3 and 6, and 7 are not anticipated by Clark.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference" [MPEP 2131 quoting *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)]. Appellants had respectfully requested the Examiner show where Clark discloses a groove for alignment at the same end as the slot for holding the wire. In the Advisory Action the Examiner states that this limitation is not present in the Appellants' claims. Claim 1, and by dependency claims 2, 4, 5, and 8, include the limitation "said wire is fixed to the machine at end one and has a means for attachment on end two", and then further "a groove on the machine, wherein said end two of the wire is laid in said groove to align the wire to the desired position". This is supported by Figures 1 and 2, where the groove is item 8. Thus end two of the wire is laid in the alignment groove, which is the same end two which is "slid into said slot" and thus Appellant discloses 'a groove for alignment at the same end [of the wire] as the slot for holding the wire.' Clark has no such limitation. The groove 47 of Clark, which the Examiner calls out as anticipating this limitation, would be located on the Appellant's end one, the end which is fixed to the machine. The other groove which the Examiner calls out from Clark, 29, is the slot to hold the wire. Appellants clearly have a slot for holding the wire, and a separate "groove to align the wire to the desired position", both of which are at end two of the wire. Therefore, since Clark does not disclose this limitation, appellant requests reversal of the Examiner regarding rejection of claims 1, and 3-8.

Claim 3 has the limitation "a slide pin which is mounted to the machine, wherein said slide block is slidably mounted to the machine on said slide pin". The Examiner does not state where Clark shows a slide pin mounted to the machine, or the slide block slidably mounted on the slide pin. What the Examiner is calling the slide pin (28) is integral with what the Examiner is calling the slide block (22), and then the slide block with the protrusion (28) is slidably mounted on the machine. The slide block (22) of Clark is not mounted TO the slide pin, it is one unit, but rather this slide block with protrusion unit is mounted BY the protrusion (28) to the holder. Thus, because Clark does not disclose a slide pin mounted to the machine with a slide block slidably mounted on the slide pin, appellant requests reversal of the Examiner regarding rejection of claim 3.

Claim 6 has the limitation "a slide pin which is mounted to said holder, and wherein said slide block is slidably mounted to said holder on said slide pin". Appellants have distinguished between being 'mounted' and being 'slidably mounted', because if everything was slidably mounted to each other, the invention would not function for its intended purpose. Thus when Appellants state "a slide pin which is mounted to said holder" Appellants **do not** mean 'a slide pin which is *slidably* mounted to said holder'. What the Examiner is calling a slide pin (28) in Clark, is slidably mounted to what the Examiner is calling the holder (21). If then the slide block was slidably mounted on the slide pin (as the limitation in claim 6 requires), the resulting apparatus would not function for its intended purpose. Thus, because Clark does not disclose a slide pin mounted to the holder, or the slide block slidably mounted on the slide pin, appellants request reversal of the Examiner regarding rejection of claim 6.

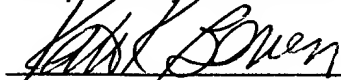
Claim 7 has the limitation "slide block is v-shaped, and wherein said v-shaped slide block comprises a leg one and a leg two, wherein said slide block leg one is slidably mounted to the machine" and "wherein said slot [to slide the wire into] is in said leg two". Claim 7 then further limits this to "wherein said leg one and said leg two form an acute angle". This limitation distinguishes between

the L – shape of Clark's item (22) and the Appellant's V-shaped slide block. The V-shape is better to prevent the wire from sliding out. In the Advisory action, the Examiner stated that "Fig. 5 in Clark shows a first leg forming an acute angle with respect to a second leg (Note the *pointed tip* on Item 22 and the angle created between this item and the lower leg). " In his own words the Examiner calls this a 'pointed tip', which he then implies is a third leg (since the L-shape already is composed of 2 legs). Appellant's leg one is slidably mounted to the machine, leg two has the slot to slide the wire into, and these two legs form an acute angle with respect to each other. The leg in Figure 5 which appears mounted to the machine **does not** form an acute angle with the leg which has the slot for the wire. Further, Figure 4 of Clark shows that the pointed tip the Examiner refers to does not even extend to where the slot 29 is for holding the wire, and thus would not aid in holding the wire in the slot. Appellants respectfully submit the Examiner has not shown where Clark discloses "wherein said leg one and said leg two form an acute angle", wherein 'leg one' and 'leg two' are defined as in Claim 7. Therefore, since Clark does not disclose this limitation, appellant requests reversal of the Examiner regarding rejection of claim 7.

IX. SUMMARY

Appellant's claimed corona wire tensioning mechanism (claims 1-8) is distinct and patentably defined over the cited reference as applied by the Examiner. Appellant requests reversal of the final rejection in its entirety.

Respectfully submitted,



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APPENDIX A

1. (once amended) A wire tensioning mechanism for tensioning a wire having an end one and an end two, in a machine, wherein said wire is fixed to the machine at end one and has a means for attachment on end two, comprising:

a groove on the machine, wherein said end two of the wire is laid in said groove to align the wire to a desired position;

a slide block which is slidably mounted to the machine at the wire end two such that said slide block slides parallel to the wire, having a slot which is wider than the wire but narrower than the means for attachment such that when said slide block is mounted on the machine, the wire end two can be slid into said slot such that pulling said slide block in the direction away from the wire forces the means for attachment against the slot, but does not allow the means for attachment to pass through; and

a spring which is mounted between the machine and said slide block such that said spring exerts a force on said slide block in the opposite direction of the force which the tensioned wire exerts on said slide block, such that the force of said spring can cause said slide block to slide, and wherein said spring is chosen such that the force exerted on said slide block causes the wire to achieve the desired tension.

3. (once amended) A wire tensioning mechanism for tensioning a wire having an end one and an end two, in a machine, wherein said wire is fixed to the machine at end one and has a means for attachment on end two, comprising:

a slide block which is slidably mounted to the machine at the wire end two such that said slide block slides parallel to the wire, having a slot which is wider than the wire but narrower than the means for attachment such that when said slide block is mounted on the machine, the wire end two can be slid into said slot such that pulling said slide block in the direction away from the wire forces the means for attachment against the slot, but does not allow the means for attachment to pass through, and wherein said slot is lined up with the wire such that when the wire is in tension, there are no side loads on the means for attachment;

a spring which is mounted between the machine and said slide block such that said spring exerts a force on said slide block in the opposite direction of the force which the tensioned wire exerts on said slide block, such that the force of said spring can cause said slide block to slide, and wherein said spring is chosen such that the force exerted on said slide block causes the wire to achieve the desired tension; and,

a slide pin which is mounted to the machine, wherein said slide block is slidably mounted to the machine on said slide pin.

4. (original) The wire tensioning mechanism of claim 1 further comprising a holder, wherein said holder is mounted to the machine, and said slide block is slidably mounted to said holder.

5. (original) The wire tensioning mechanism of claim 1 further comprising a holder wherein said holder is mounted to the machine, and said slide block is slidably mounted to said holder, and said spring is mounted between said slide block and said holder.

6. (once amended) A wire tensioning mechanism for tensioning a wire having an end one and an end two, in a machine, wherein said wire is fixed to the machine at end one and has a means for attachment on end two, comprising:

a slide block which is slidably mounted to the machine at the wire end two such that said slide block slides parallel to the wire, having a slot which is wider than the wire but narrower than the means for attachment such that when said slide block is mounted on the machine, the wire end two can be slid into said slot such that pulling said slide block in the direction away from the wire forces the means for attachment against the slot, but does not allow the means for attachment to pass through, and wherein said slot is lined up with the wire such that when the wire is in tension, there are no side loads on the means for attachment;

a spring which is mounted between the machine and said slide block such that said spring exerts a force on said slide block in the opposite direction of the force which the tensioned wire exerts on said slide block, such that the force of said spring can cause said slide block to slide, and wherein said spring is chosen

such that the force exerted on said slide block causes the wire to achieve the desired tension;

a holder, wherein said holder is mounted to the machine; and,

a slide pin which is mounted to said holder, and wherein said slide block is slidably mounted to said holder on said slide pin.

7. (once amended) A wire tensioning mechanism for tensioning a wire having an end one and an end two, in a machine, wherein said wire is fixed to the machine at end one and has a means for attachment on end two, comprising:

a slide block which is slidably mounted to the machine at the wire end two such that said slide block slides parallel to the wire, having a slot which is wider than the wire but narrower than the means for attachment such that when said slide block is mounted on the machine, the wire end two can be slid into said slot such that pulling said slide block in the direction away from the wire forces the means for attachment against the slot, but does not allow the means for attachment to pass through, and wherein said slot is lined up with the wire such that when the wire is in tension, there are no side loads on the means for attachment;

a spring which is mounted between the machine and said slide block such that said spring exerts a force on said slide block in the opposite direction of the force which the tensioned wire exerts on said slide block, such that the force of said spring can cause said slide block to slide, and wherein said spring is chosen such that the force exerted on said slide block causes the wire to achieve the desired tension; and,

wherein said slide block is v-shaped, and wherein said v-shaped slide block comprises a leg one and a leg two, wherein said slide block leg one is slidably mounted to the machine, and wherein said leg two is on the same side of said leg one as the wire such that said leg two angles away from the wire, wherein said slot is in said leg two;

wherein said leg one and said leg two form an acute angle.

8. (original) The wire tensioning mechanism of claim 1 wherein said spring is a compression spring.

APPENDIX B

Docket No.2000007

APPLICATION FOR UNITED STATES PATENT

CORONA WIRE TENSIONING MECHANISM

INVENTORS: Daniel R. Palmer

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Gary B. Bertram

DATE : October 13, 2000

CORONA WIRE TENSIONING MECHANISM

BACKGROUND

5 The present invention is in the field of electrophotographic printers and copiers. More specifically this invention relates to the corona charging device used to charge the surface of a photoconductor.

10 The corona charging device usually contains one or more small diameter (e.g. .003 inch diameter) corona wires. It is important that these wires be properly tensioned. Excessive tension can result in wire breakage, whereas insufficient tension can result in wire vibration and subsequent non-uniform charging of the photoconductor. Additionally, corona wires have a finite life and must be replaced in the field.

15 It is common practice to spring load corona wires to achieve the proper tension. One method used to do this is to crimp lugs onto the ends of the wires, secure one end of the wires, and then insert the lugs on the other end through the hook of an extension spring. Multiple wires may then be tensioned by mounting these springs on a tensioner block and rotating and securing the tensioner block at the desired tension. One drawback of this method is that it is
20 difficult to maintain engagement between the lugs and the springs while rotating and securing the tension block. Another drawback is that because the spring and the corona wire are in direct contact in this method, the spring is at the same voltage as the wire, and there is a risk of arcing by the spring. One further problem with this method is that the force of the spring hooks can impart side
25 loads on the lugs, which in turn can impose undue stress on the wires.

30 A corona wire tensioning mechanism is desired which would allow individual replacement of the corona wires, which would not impart side loads on the wires, and which would easily maintain engagement between the wire and the tensioning mechanism and yet be isolated from the spring so as to minimize the danger of arcing by the spring.

SUMMARY OF THE INVENTION

A wire tensioning mechanism for tensioning a wire having an end one and an end two in a machine, wherein the wire has a means for attachment on end two and is fixed to the machine at end one, comprises a slide block, and a spring.

5 The slide block is slidably mounted to the machine at end two of the wire, such that the slide block slides parallel to the wire. The slide block has a slot which is wider than the wire but narrower than the means for attachment, such that when the slide block is mounted on the machine, the wire end two can be
10 slid into the slot such that pulling the slide block in the direction away from the wire forces the means for attachment against the slot, but does not allow the means for attachment to pass through. The slot is lined up with the wire such that when the wire is in tension, there are no side loads on the means for attachment.

15

BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 is an isometric view of a wire tensioning device according to an aspect
20 of the invention.

FIGURE 2 is an isometric view of a wire tensioning device according to a further aspect of the invention.

FIGURE 3 is a side view of a wire tensioning device according to an aspect of the invention.

25 FIGURE 4 is a top view of a wire tensioning device, according to an aspect of the invention.

FIGURE 5 is a top view of a continuous corona wire configuration with a wire tensioning device according to an aspect of the invention.

DETAILED DESCRIPTION

This invention discloses a means for spring loading the wire 6 without actually attaching the spring 40 to the wire 6. This minimizes the risk of arcing from the spring 40 to the wire 6 and to other components within the machine. This improvement also minimizes side loads on the wire 6 by distributing the force on the attachment means 3, such as a lug, all the way around the attachment means 3.

Various aspects of the invention are presented in Figures 1-5 which are not drawn to scale and in which like components are numbered alike. Referring now to Figure 1 according to an aspect of the invention, a wire tensioning mechanism 2 for tensioning a wire 6 having an end one (not shown) and an end two 7 (see figures 2-3) in a machine 4 wherein the wire 6 has a means for attachment 3 on end two 7 and is fixed to the machine 4 at end one, comprises a slide block 30, and a spring 40.

The slide block 30 is slidably mounted to the machine 4 at end two 7 of the wire, such that the slide block 30 slides parallel to the wire 6. The slide block 30 has a slot 35 which is wider than the wire 6 but narrower than the means for attachment 3, such that when the slide block 30 is mounted on the machine 4, the wire end two 7 can be slid into the slot 35 such that pulling the slide block 30 in the direction away from the wire 6 forces the means for attachment 3 against the slot 35, but does not allow the means for attachment 3 to pass through. The slot 35 is lined up with the wire 6 such that when the wire 6 is in tension, there are no side loads on the means for attachment 3. In a preferred embodiment, the means for attachment 3 is a lug crimped on the wire end two 7.

In order to align the wire 6 to the desired direction, the machine 4 will often have grooves 8 where the wire must lay. In this case, the slide block 30 is preferably slightly offset from the groove 8 in order to register the wire 6 against the groove 8 such that the wire 6 doesn't move.

The spring 40 is mounted between the machine 4 and the slide block 30 such that the spring 40 exerts a force on the slide block 30 in the opposite direction of

the force which the tensioned wire 6 exerts on the slide block 30. The force of the spring 40 can cause the slide block 30 to slide, and the spring 40 is chosen such that the force exerted on the slide block 30 causes the wire 6 to achieve the desired tension. Thus the spring 40 forces the slide block 30 to pull on the wire

5 6.

Referring now to Figures 2-4, in a preferred embodiment of the invention, the wire tensioning mechanism 2 further comprises a holder 10 which is mounted to the machine 4. In this embodiment, the slide block 30 is slidably mounted to the holder 10. A preferred means of slidably mounting the slide block 30 to the
10 holder 10 is to use a slide pin 20, wherein the slide pin 20 is mounted to the holder 10. A slide pin 20 may be mounted directly to the machine 4, wherein the slide block 30 is slidably mounted to the machine 4 on the slide pin 20 (this configuration is not shown).

When a holder 10 is incorporated, the spring 40 may be mounted between
15 the machine 4 and the slide block 30, or between the holder 10 and the slide block 30 (this configuration not shown). The preferred embodiment is to have the spring 40 mounted between the slide block 30 and the holder 10.

In a further preferred embodiment, the slide block 30 is v-shaped, and the v-shaped slide block 30 comprises a leg one 34 and a leg two 32 (this is best seen
20 in Fig-3). Slide block leg one 34 is slidably mounted to the machine 4, and leg two 32 is on the same side of leg one 34 as the wire 6 such that leg two 32 angles away from the wire 6. Thus the "v" is laying on one of its sides (leg one 34), and the slot 35 is in the other side of the "v" (leg two 32). The portion of the slide block 30 with the slot 35 angles away from the wire 6 in order to better keep
25 the wire 6 from slipping out of the slot 35.

According to a further preferred embodiment, the spring 40 is a compression spring. Although a compression spring is preferred for space constraint reasons, a tension spring will also work.

In a typical electrophotographic machine, multiple corona wires are
30 present.

Referring now to Figure 5, rather than have individual wires, according to a further aspect of the invention, a single continuous wire **6** may be used which would be strung in such a way as to create multiple segments. This continuous wire **6** would have an end one **5** and an end two **7**, wherein end one **5** is secured
5 against movement and end two **7** has a lug **3** crimped on. Wherein the necessary bends in the wire are achieved by wrapping the wire **6** around restraining devices **50**, end two **7** is wrapped around the final restraining device **51** such that it makes an angle with the rest of the wire **6** of approximately 90°. End two **7** is then secured by a wire tensioning mechanism of the type described
10 above. Many different types of restraining devices are acceptable; posts, pins, pulleys and grooves are all examples of restraining devices which may be used. However this invention is not limited to these specific examples, any device which acts to restrain the wire such that the wire may be bent into multiple segments may be used.

What is claimed is:

1. A wire tensioning mechanism for tensioning a wire having an end one and an end two, in a machine, wherein said wire is fixed to the machine at end one and has a means for attachment on end two, comprising:

5 a slide block which is slidably mounted to the machine at the wire end two such that said slide block slides parallel to the wire, having a slot which is wider than the wire but narrower than the means for attachment such that when said slide block is mounted on the machine, the wire end two can be slid into said slot such that pulling said slide block in the direction away from the wire forces the
10 means for attachment against the slot, but does not allow the means for attachment to pass through, and wherein said slot is lined up with the wire such that when the wire is in tension, there are no side loads on the means for attachment; and

a spring which is mounted between the machine and said slide block such
15 that said spring exerts a force on said slide block in the opposite direction of the force which the tensioned wire exerts on said slide block, such that the force of said spring can cause said slide block to slide, and wherein said spring is chosen such that the force exerted on said slide block causes the wire to achieve the desired tension.

20 2. The wire tensioning mechanism of claim 1 wherein said means for attachment is a lug which has been crimped on the wire.

3. The wire tensioning mechanism of claim 1 further comprising a slide pin which is mounted to the machine, wherein said slide block is slidably mounted to the machine on said slide pin.

25 4. The wire tensioning mechanism of claim 1 further comprising a holder, wherein said holder is mounted to the machine, and said slide block is slidably mounted to said holder.

5. The wire tensioning mechanism of claim 1 further comprising a holder wherein said holder is mounted to the machine, and said slide block is slidably
30 mounted to said holder, and said spring is mounted between said slide block and said holder.

6. The wire tensioning mechanism of claim 1 further comprising:
a holder, wherein said holder is mounted to the machine; and,
a slide pin which is mounted to said holder, and wherein said slide block is
slidably mounted to said holder on said slide pin.

5 7. The wire tensioning mechanism of claim 1 wherein said slide block is v-
shaped, and wherein said v-shaped slide block comprises a leg one and a leg
two wherein said slide block leg one is slidably mounted to the machine, and
wherein said leg two is on the same side of said leg one as the wire such that
said leg two angles away from the wire, wherein said slot is in said leg two.

10 8. The wire tensioning mechanism of claim 1 wherein said spring is a
compression spring.

9. In a corona wire tensioning device for electrophotography, the wire having
opposing ends end one and end two, and having a lug crimped on end one and
end two as a means for attachment to the wires, wherein end one of the wire is
15 secured against movement, and the end two of the wire is laid in a groove on the
electrophotographic machine to align the wire to the desired position, and spring
loaded to the appropriate tension, the improvement comprising:

a holder which is mounted to the machine at the position of the grooves;

a slide pin which is mounted to said holder such that it is parallel to the wire;

20 a v-shaped slide block comprising a leg one and a leg two wherein said slide
block leg one is slidably mounted to said holder on said slide pin such that said
slide block leg one is free to slide on said slide pin in the direction parallel to the
wire, and such that said leg one is parallel to said slide pin, and wherein said leg
two is on the same side of said holder as the wire such that said leg two angles
25 away from the wire, wherein said leg two has a slot which is wider than the wire
but narrower than the lug such that when said slide block is mounted on said
holder, the wire end two having the lug crimped on can be slid into said slot such
that pulling on the wire in the direction away from said slide block forces the lug
into the back of said slot, but does not allow the lug to pass through, and wherein
30 said slot is slightly offset from the groove such that when the wire is in tension,
the wire is registered against the groove; and,

a spring having an end one and an end two, wherein said spring is mounted between said holder and said slide block such that said spring exerts a force on said slide block in the opposite direction of the force which the tensioned wire exerts on said slide block, such that the force of said spring can cause said slide
5 block to slide along said slide pin, and wherein said spring is chosen such that the force exerted on said slide block causes the wire to achieve the desired tension.

10. In the corona wire tensioning device for electrophotography of claim 9 wherein said spring is a compression spring.

10 11. A corona wire configuration with a tensioning mechanism for an electrophotographic machine comprising:

a single continuous wire having an end one and an end two, wherein end one is secured against movement and end two has a lug crimped on, and wherein said wire is strung in such a way as to create multiple segments;
15 restraining devices which are mounted to the machine such that the necessary bends in said wire are achieved by wrapping said wire around said restraining devices;

means for attachment

a final restraining device, such that end two is wrapped around said final restraining device such that it makes approximately a 90° angle with the rest of
20 said wire;

a slide block which is slidably mounted to the machine such that said slide block slides towards said final restraining device, having a slot which is wider than the wire but narrower than the means for attachment such that when said slide block is mounted on said holder, the wire end having the means for
25 attachment crimped on can be slid into said slot such that pulling on the wire in the direction away from the slide block forces the means for attachment into the back of the slot, but does not allow the means for attachment to pass through, and wherein said slot is lined up with the wire such that when the wire is in tension, there are no side loads on the means for attachment; and

30 a spring having an end one and an end two, wherein said spring is mounted between the machine and said slide block such that said spring exerts a force on

said slide block in the opposite direction of the force which the tensioned wire exerts on said slide block, such that the force of said spring can cause said slide block to slide, and wherein said spring is chosen such that the force exerted on said slide block causes the wire to achieve the desired tension.

5 12. The corona wire configuration with a tensioning mechanism for the electrophotographic machine of claim 11, wherein said restraining devices are pins.

10 13. The corona wire configuration with a tensioning mechanism for the electrophotographic machine of claim 11, wherein said restraining devices are pulleys.

14. The corona wire configuration with a tensioning mechanism for the electrophotographic machine of claim 11, wherein said restraining devices are posts.

15 15. The corona wire configuration with a tensioning mechanism for the electrophotographic machine of claim 11, wherein said restraining devices are grooves.

16. The corona wire configuration with a tensioning mechanism for the electrophotographic machine of claim 11, wherein said means for attachment is a lug which has been crimped on the wire.

20 17. The corona wire configuration with a tensioning mechanism for the electrophotographic machine of claim 11 wherein said slide block is slidably mounted on a slide pin, which is mounted to the machine.

25 18. The corona wire configuration with a tensioning mechanism for the electrophotographic machine of claim 11, wherein a holder is mounted to the machine, and said slide block is slidably mounted to said holder.

19. The corona wire configuration with a tensioning mechanism for the electrophotographic machine of claim 11, wherein a holder is mounted to the machine, and said slide block is slidably mounted to said holder, and said spring is mounted between said slide block and said holder.

30 20. The corona wire configuration with a tensioning mechanism for the electrophotographic machine of claim 11, wherein a holder is mounted to the

machine, and said slide block is slidably mounted on a slide pin which is mounted to said holder.

21. The corona wire configuration with a tensioning mechanism for the electrophotographic machine of claim 11, wherein said slide block is v-shaped, and wherein said v-shaped slide block comprises a leg one and a leg two wherein said slide block leg one is slidably mounted to the machine such that said slide block leg one is free to slide in the direction parallel to the wire, and wherein said leg two is on the same side of said leg one as the wire such that said leg two angles away from the wire, wherein said slot is in said leg two.

22. The corona wire configuration with a tensioning mechanism for the electrophotographic machine of claim 11, wherein the spring is a compression spring.

15

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ABSTRACT

5 A wire tensioning mechanism for tensioning a wire having an end one and an end two in a machine in which the wire has a means for attachment on end two and is fixed to the machine at end one, comprises a slide block, and a spring.

10 The slide block is slidably mounted to the machine at end two of the wire, such that the slide block slides parallel to the wire. The slide block has a slot which is wider than the wire but narrower than the means for attachment, such that when the slide block is mounted on the machine, the wire end two can be slid into the slot such that pulling the slide block in the direction away from the wire forces the means for attachment against the slot, but does not allow the means for attachment to pass through. The slot is lined up with the wire such that when the wire is in tension, there are no side loads on the means for
15 attachment.

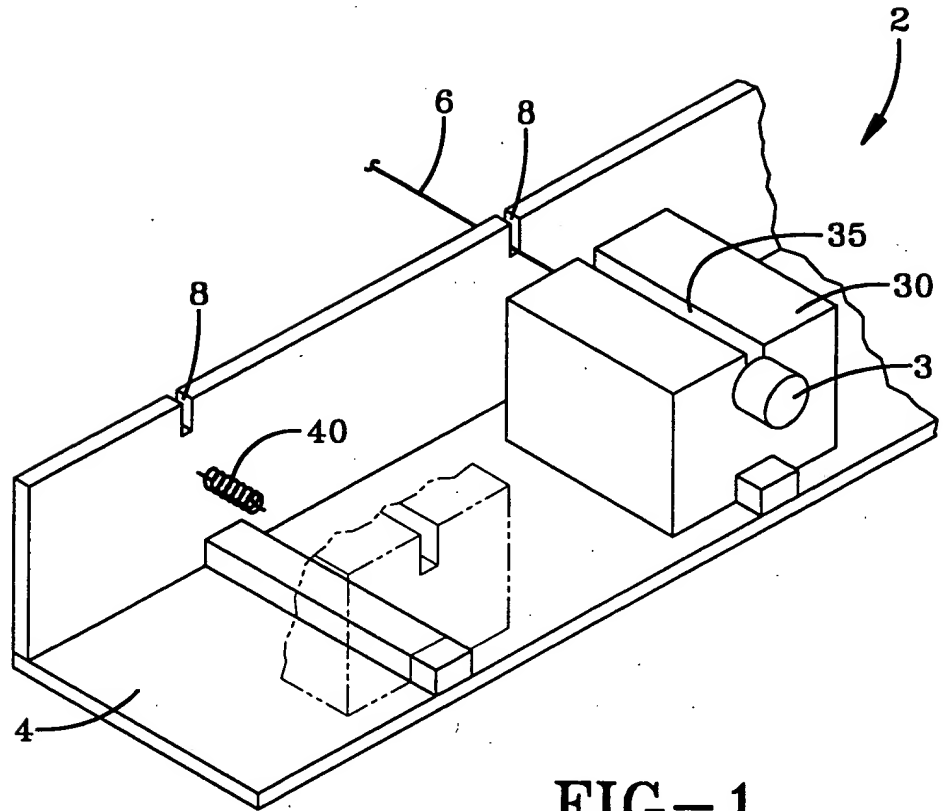


FIG-1

2/3

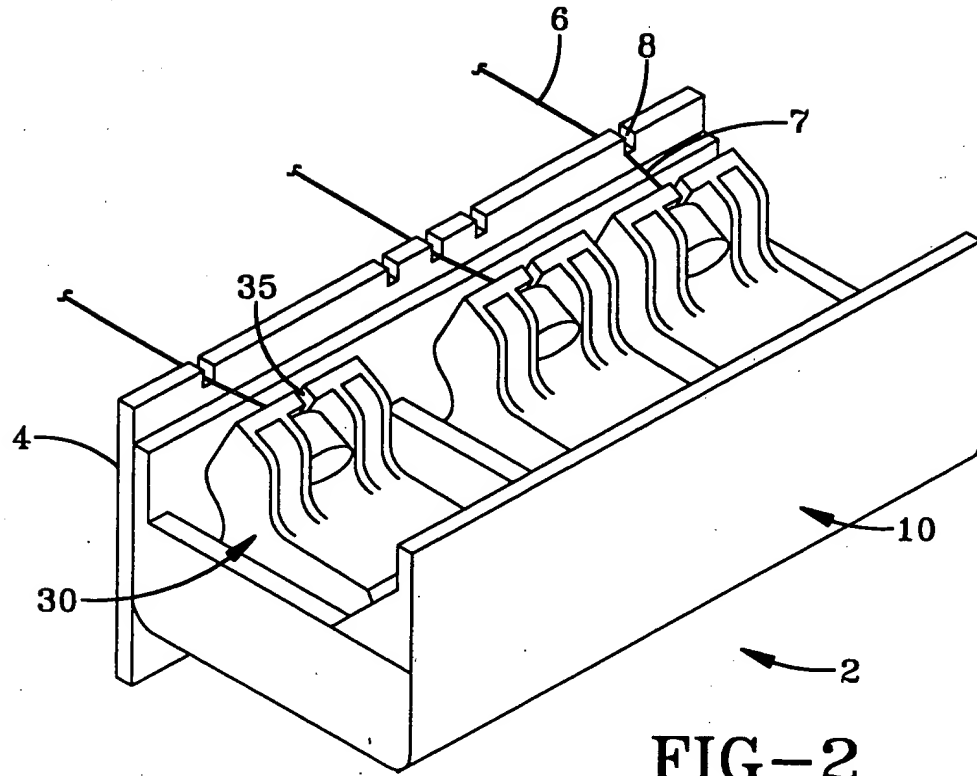


FIG-2

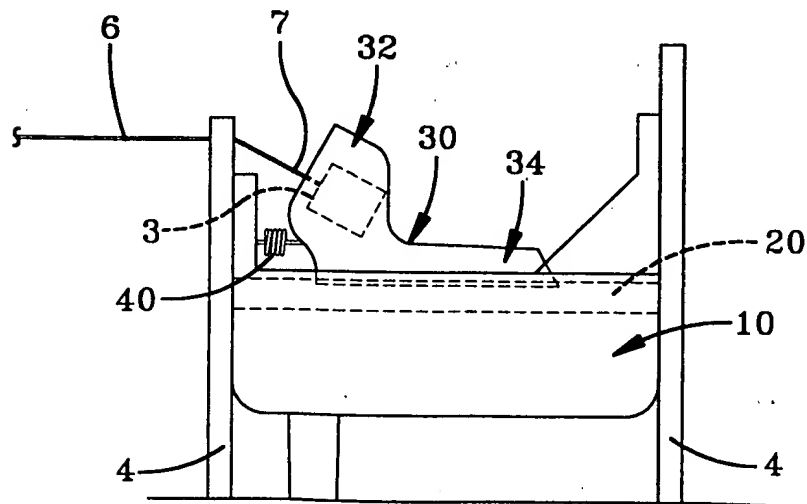


FIG-3

3/3

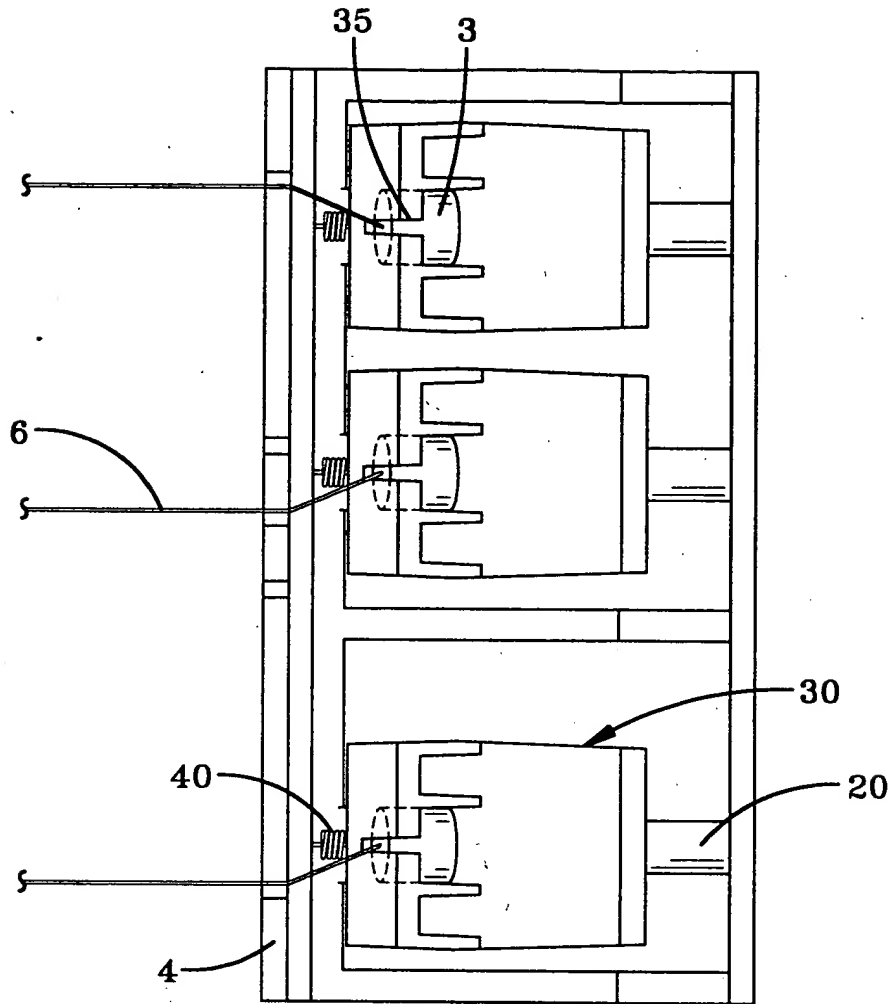


FIG-4

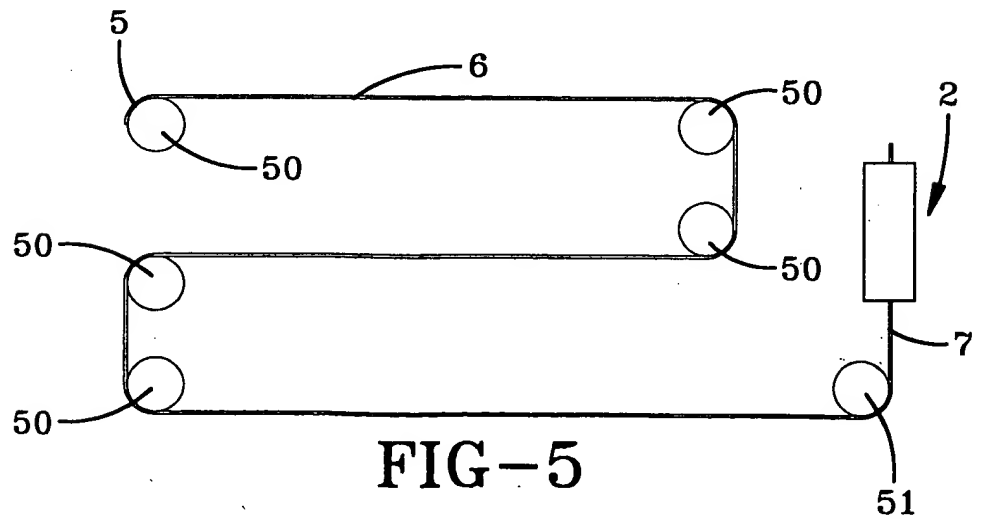


FIG-5

APPENDIX C



UNITED STATES Patent and TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/688,002	10/14/2000	Daniel R. Palmer	2000007	9193

7590 09/22/2004

Kathleen K Bowen
311 Hillbrook Dr
Cuyahoga Falls, OH 44223

EXAMINER

VANORE, DAVID A

ART UNIT PAPER NUMBER

2881

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action

Application No.

09/688,002

Applicant(s)

PALMER ET AL.

Examiner

David A Vanore

Art Unit

2881

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED September 2, 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☒ A Notice of Appeal was filed on September 3, 2004. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
- (b) ☐ they raise the issue of new matter (see Note below);
- (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____

3. ☒ Applicant's reply has overcome the following rejection(s): Claim 2.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____

Claim(s) objected to: 2.Claim(s) rejected: 1 and 3-8.

Claim(s) withdrawn from consideration: _____

8. ☐ The drawing correction filed on _____ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
10. ☐ Other: _____

Continuation of 5. does NOT place the application in condition for allowance because: Applicant's remarks regarding claim 1 are not persuasive. Applicant points out that Clark does not teach a "groove for alignment at the same end as the slot for holding the wire." This limitation is not present in the claims. Clark teaches the groove required in Claim 1 as pointed out in the previous Office action where groove 29 has therein a wire laid for alignment (Note Page 3 of the Final Rejection). Regarding Applicant's remarks concerning claims 3 and 6, if the slide block is mounted by the slide pin, it is necessarily mounted to the slide pin. Regarding applicant's arguments regarding claim 7, Fig. 5 in Clark shows a first leg forming an acute angle with respect to a second leg (Note the pointed tip on Item 22 and the angle created between this Item and the lower leg).


JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

APPENDIX D

S/N 09/688,002
Filing Date 10/14/2000



CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on

September 2, 2004
Date of Deposit

Kathleen K. Bowen
Name of Applicant, Assignee, or
Registered Representative

Kathleen K. Bowen
Signature

September 2, 2004
Date of Signature

Attorney Docket No. 2000-007

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Daniel R. Palmer,
Warren G. Branch III, and
Gary B. Bertram

Serial No. 09/688,002

Filing Date: October 14, 2000

For Corona Wire Tensioning
Mechanism

Examiner: David A. Vanore

Group Art Unit No. 2881

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

In response to the office communication mailed on June 3, 2004;

REMARKS

Claims 1-22 are pending in the application, and claims 9-22 have been withdrawn from further consideration due to a restriction requirement, which was timely traversed. Claims 1-8 stand rejected under 35 USC 102 as being anticipated by US Patent 3,908,127, by Clark. Applicants respectfully submit that claim 1, and by dependency claims 2, 4, 5, and 8, are not anticipated by Clark. Applicants further respectfully submit that for the following reasons, claims 3 and 6, and 7 are not anticipated by Clark. Applicants respectfully request reconsideration and further examination of claims 1-8.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference" [MPEP 2131 quoting *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)]. Claim 1, and by dependency claims 2, 4, 5, and 8, include the limitation "a groove on the machine, wherein said end two of the wire is laid in said groove to align the wire to the desired position". This is supported by Figures 1 and 2, where the groove is item 8. Clark has no such limitation. The groove 47 of Clark, which the Examiner calls out as anticipating this limitation, would be located on the Applicant's end one. The other groove which the Examiner calls out from Clark, 29, is the slot to hold the wire. Applicants clearly have a slot for attaching the wire, and a separate "groove to align the wire to the desired position", both of which are at end two of the wire. Applicants respectfully request the Examiner show where Clark discloses a groove for alignment at the same end as the slot for holding the wire. In the absence of this, applicants submit that Claim 1, and by dependency claims 2, 4, 5, and 8 are not anticipated by Clark, and request this rejection be withdrawn.

Claim 2 further includes the limitation that "said means for attachment is a lug which has been crimped on the wire." The examiner has not shown where Clark discloses this limitation. Applicants respectfully request the Examiner show

where Clark discloses the "means for attachment is a lug which has been crimped on the wire" so that Applicant's may adequately respond. In the absence of this, applicants submit that Claim 2 is not anticipated by Clark, and request this rejection be withdrawn.

Claim 3 is rewritten in independent form incorporating all of the limitations of claim 1, which was previously incorporated by reference. Therefore, claim 3 is in the same form as originally presented. Claim 3 has the limitation "a slide pin which is mounted to the machine, wherein said slide block is slidably mounted to the machine on said slide pin". The Examiner does not state where Clark shows a slide pin mounted to the machine, or the slide block slidably mounted on the slide pin. What the Examiner is calling the slide pin (28) is mounted to what the Examiner is calling the slide block (22), and then the slide block/pin combination is slidably mounted on the machine. The slide block (22) of Clark is not mounted TO the slide pin, but rather is mounted BY the slide pin to the holder – the slide pin (28) and the slide block(22) of Clark are one unit Thus, because Clark does not disclose a slide pin mounted to the machine, or the slide block slidably mounted on the slide pin, Claim 3 is not anticipated by Clark. Applicants respectfully submit that rejection of claim 3 on this basis is in error, and request that the rejection on this basis be withdrawn.

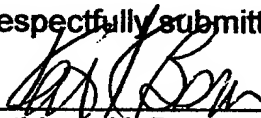
Claim 6 is rewritten in independent form incorporating all of the limitations of claim 1, which was previously incorporated by reference. Therefore, claim 6 is in the same form as originally presented. Claim 6 has the limitation "a slide pin which is mounted to said holder, and wherein said slide block is slidably mounted to said holder on said slide pin". The Examiner does not state where Clark shows a slide pin mounted to the holder, or the slide block slidably mounted on the slide pin. In fact the examiner states "the slide pins being mounted on the slide block (22)." Applicants respectfully submit that rejection of claim 6 on this basis is in error, and request that the rejection on this basis be withdrawn.

Claim 7 has the limitation "wherein said leg one and said leg two form an acute angle". This limitation distinguishes between the L – shape of Clark's item

(22) and the applicant's V-shaped slide block. The V-shape is better to prevent the wire from sliding out. Applicants respectfully request the Examiner show where Clark discloses "wherein said leg one and said leg two form an acute angle". In the absence of such, applicants submit that claim 7 is not anticipated by Clark, and request that this rejection be withdrawn.

Applicants respectfully submit that claims 1-8 are allowable and request that the rejections against them be withdrawn.

Respectfully submitted,



Kathleen K. Bowen, Esq.
Registration No. 42,352
Attorney for Applicants

APPENDIX E



UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/688,002	10/14/2000	Daniel R. Palmer	2000007	9193

7590 06/03/2004
Kathleen K Bowen
311 Hillbrook Dr
Cuyahoga Falls, OH 44223

EXAMINER

VANORE, DAVID A

ART UNIT	PAPER NUMBER
----------	--------------

2881

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/688,002

Applicant(s)

PALMER ET AL. 

Examiner

David A Vanore

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

Applicant argues with respect to claims 1, 2, 4, 5, and 8 that the Clark reference fails to teach the limitations of claim 1 further comprising a groove on the machine.

Applicant argues with respect to claim 3 that the examiner has failed to state where Clark shows a slide pin mounted to the machine wherein the slide block is slidably mounted to the machine on the slide pin. As pointed out in the previous Office action, Item 22 is the moveable member, sliding parallel to the wire in grooves 25a on slide pins 28 which couple the sliding member to the machine via fixed member 21. Clark teaches all the required limitations as recited in claim 3.

Applicant has argued that the examiner has failed to point out where Clark shows a slide pin mounted to a holder. The examiner has clarified the rejection below. Fig. 4 of Clark clearly shows that the slide pin (28) is mounted to the holder (21).

Applicant has argued with respect to claim 7 that the newly added limitation distinguishes claim 7 from the prior art of Clark. Turning to Fig. 3 of the applicant's drawings, leg one and leg two in the applicant's device form a right angle and therefore do not form an acute angle. Clark anticipates claim 7.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Clark.

Regarding claims 1-3 and 8, Clark teaches a wire tensioning device comprising a wire (11) having two ends with at least one end being mounted in a moveable fashion and at least one end mounted in a fixed fashion (Paragraph 9), a slide block (22) which slides parallel to the wire in grooves 25a on slide pin (28), and compression springs (23) mounted between the machine and slide block within grooves 25a such that the spring exerts force in the opposite direction of tension the wire exerts on the block (Col. 6) such that desired tension is kept on the wire. Wire ends are inserted into slots in the at least one slide block having a slot wider than the means for attachment, such as the knotting or crimping disclosed in Col. 6. Clark further teaches a groove on the machine (29 or 47).

Regarding claims 4-6, the device of Clark comprises a holder (21) which contains grooves (25a) and springs (23). The holder is fixed to the device, and the springs are between the holder and the slide pins (28), the slide pins being mounted to holder 21 in groove 25a such that slide block 22 may slide in grooves 25a.

Art Unit: 2881

Regarding claim 7, the slide block of Clark is v-shaped, has two legs, the leg containing the wire angling away from the wire (Fig. 5).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

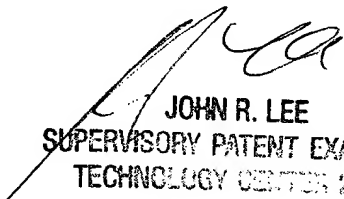
Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A Vanore whose telephone number is (571) 272-2483. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571) 272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2881

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dav



JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

10/29/04

JPWAF/2881

PTO/SB/17 (10-04)

Approved for use through 07/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

FEE TRANSMITTAL

OCT 28 2004

for FY 2005

Effective 10/1/2004. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27**TOTAL AMOUNT OF PAYMENT (\$)** 340**Complete if Known**

Application Number	09/688,002
Filing Date	10/14/2000
First Named Inventor	Palmer
Examiner Name	David A. Vanore
Art Unit	2881
Attorney Docket No.	2000007

METHOD OF PAYMENT (check all that apply)
☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None
☒ Deposit Account:

Deposit Account Number

501381

Deposit Account Name

Heidelberg Digital LLC

The Director is authorized to: (check all that apply)☐ Charge fee(s) indicated below ☐ Credit any overpayments☒ Charge any additional fee(s) or any underpayment of fee(s)☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.**FEE CALCULATION****1. BASIC FILING FEE**

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1001	790	2001	395	Utility filing fee	
1002	350	2002	175	Design filing fee	
1003	550	2003	275	Plant filing fee	
1004	790	2004	395	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	
SUBTOTAL (1)					(\$)

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

		Extra Claims		Fee from below		Fee Paid
Total Claims	<input type="text"/>	-20** =	<input type="text"/>	X	<input type="text"/>	<input type="text"/>
Independent Claims	<input type="text"/>	-3** =	<input type="text"/>	X	<input type="text"/>	<input type="text"/>
Multiple Dependent					<input type="text"/>	<input type="text"/>

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1202	18	2202	9	Claims in excess of 20	
1201	88	2201	44	Independent claims in excess of 3	
1203	300	2203	150	Multiple dependent claim, if not paid	
1204	88	2204	44	** Reissue independent claims over original patent	
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent	
SUBTOTAL (2)					(\$)

**or number previously paid, if greater. For Reissues, see above

FEE CALCULATION (continued)**3. ADDITIONAL FEES**

Large Entity Small Entity

Fee Code	Fee (\$)	Fee Code	Fee (\$)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for ex parte reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	430	2252	215	Extension for reply within second month	
1253	980	2253	490	Extension for reply within third month	
1254	1,530	2254	765	Extension for reply within fourth month	
1255	2,080	2255	1,040	Extension for reply within fifth month	
1401	340	2401	170	Notice of Appeal	
1402	340	2402	170	Filing a brief in support of an appeal	340
1403	300	2403	150	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,370	2501	685	Utility issue fee (or reissue)	
1502	490	2502	245	Design issue fee	
1503	660	2503	330	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	790	2809	395	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	790	2810	395	For each additional invention to be examined (37 CFR 1.129(b))	
1801	790	2801	395	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify)

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$)

340

SUBMITTED BY

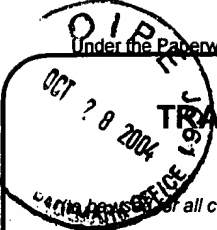
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Name (Print/Type)	Kathleen K. Bowen	Registration No. (Attorney/Agent)	42,352	Telephone	330-945-6931
Signature	<i>Kathleen K. Bowen</i>	Date	10/28/2004		

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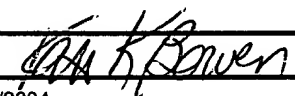
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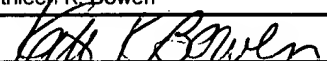
 TRANSMITTAL FORM (Use this form for all correspondence after initial filing)	Application Number	09/688,002	
	Filing Date	10/14/2000	
	First Named Inventor	Palmer	
	Art Unit	2881	
	Examiner Name	David A. Vanore	
Total Number of Pages in This Submission	**	Attorney Docket Number	2000007

ENCLOSURES (Check all that apply)		
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<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	** 3 copies of Appeal Brief	

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Firm or Individual	Kathleen K. Bowen Co. LPA
Signature	
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